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Factors Influencing Information credibility on Social Media Platforms: Evidence from Facebook Pages

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Abstract

Information on social media platforms suffers from a relative lack of professional gatekeepers to monitor content. How to evaluate the information credibility on social media platform has become an important issue for today information consumers. Despite its importance, little research has empirically examined what factors influence the information credibility on social media platforms, which limits our understanding of the determinants of online information assessment. To fill this gap, this study examines the factors that influence individuals' perceived information credibility on social media platforms. Drawing on the persuasion theory—the Elaboration Likelihood Model (ELM), we identify that five factors from two dimensions of credibility (medium and message credibility) are key ingredients in the online information assessment, and develop a research model that predicts individuals' perceived information credibility on social media platforms. We test and validate the proposed model with empirical data from 135 users of the Facebook page. The results show that interactivity, medium dependency from the medium credibility dimension and argument strength from the message credibility dimension are main determinants of the information credibility. However, we did not observe any moderating effect of personal expertise between two credibility dimensions and information credibility, which suggested from ELM.

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1. Introduction

Social media depend on mobile and web-based technologies to create highly interactive platforms through which individuals and communities share, co-create, discuss, and modify user-generated content. They

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introduce substantial and pervasive changes to communication between businesses, organizations, communities, and individuals [1]. The difference between social media platforms and traditional media channels is that users of social media platforms become content creators, not just content reviewers. We encounter a great deal of information in our daily life, and one of the criteria we use to filter information is its credibility, or believability [2]. Information credibility is defined as the extent to which one perceives information to be believable [3], and is a strong predictor of an information consumer's further action [4]. Because large-scale collaborative creation is one of the main ways of forming information in the social network, the user-generated content is sometimes viewed with skepticism; readers do not consider it as a reliable source of information [6]. Previous research has reported how to judge the information credibility on traditional media or websites. However, information on social media platforms suffers from a lack of professional gatekeepers to monitor content. It is not unusual to find that unverified or falsified information continues to flood on social media. In this situation, information consumers are forced to look for new ways to evaluate the credible information. While some researchers have addressed issues related to the information credibility on social media, they mainly focused on a specific type of social media platforms, such as blogs or Twitter. Furthermore, most previous studies have produced fragmented and equivocal research findings. The fractured state of the research and the lack of a coherent theoretical foundation have limited our understanding regarding the elements of credibility assessment on social media platforms. Consequently, the question as to what factors influence the information credibility on social media platforms still remains unclear.

To fill this gap, this study focuses on the dynamics observed in Facebook pages during the Umbrella Movement in Hong Kong beginning on September 27, 2014. People used Facebook pages as a new method to release verified information. Many Facebook pages were created and played a role as fact-checking machines. Those Facebook pages allow people to more efficiently manage the quality of information they have to process during the Umbrella Movement in Hong Kong. Among others, a Facebook page, "LIVE: Verified updates" that developed by a group of students, has been known to serve as an effective filtering mechanism [9]. Although information in this Facebook page was user-generated content and the fidelity of it was hardly judged, this page gained more than 100,000 "Likes" in only four days during that period. With the emergence of new usage of Facebook pages and new audience of those platforms, a more precise understanding of the factors that influence the information credibility is required. Hence, the current study is an effort to answer the following question:

What are the factors that influence the information credibility on Facebook pages?

To develop a theoretical framework for research question, we rely on two traditional dimensions of credibility—medium and message credibility—which are supported in the literature [10, 11]. We also adopt the persuasion theory—the Elaboration Likelihood Model (ELM) [40] to evaluate receiver's judgment of the information credibility under different levels of expertise. This paper proceeds as follow: In the next section, we do some literature review to introduce the elements of credibility assessment. Since the differences among various media channels, we utilize previous literature to develop our research model and make it more suitable for our study context—Facebook-based platforms. We also propose some hypotheses. After that, the research methodology is introduced, hypothesis tests are performed, and results are discussed. At the end, limitations and possibilities of future research are suggested.

2. Theoretical background and hypotheses

Research on information credibility began with an interest in its role in the persuasion process—developed by Petty and Cacioppo [40], the elaboration likelihood model (ELM) [40] explains how people

become persuaded, providing researchers with a solid theoretical ground to explain what factors influence people's perceptions of information credibility. The main tenet of the theory is that there are two routes that can affect information receiver's attitude towards the information; the central and the peripheral routes: (1) the central route that requires lots of diligent consideration of informational factors, such as content and argument strength of information; and (2) the peripheral route that considers less cognitive work but focuses on information-irrelevant factors that information consumer use to assess the information.[40] ELM suggests two factors—information consumer's motivation and ability—can be the significant moderators to shift the effects of central and peripheral factors on people's perception of information credibility. When people has high level of ability to evaluate the information credibility, he or she will take central route that consider information content very carefully. When people have minor level of ability to evaluate the information credibility, he or she will take peripheral route that put effort to evaluate medium that provide information.

Drawing on ELM, we develop a theoretical model that predicts information credibility of social media platforms. To do so, we first review credibility literature and identify two dimensions of the information credibility—medium credibility and message credibility. Medium credibility refers to the perceived level of credibility that individual users have of a specific medium [12, 13]. Message credibility refers to the perceived credibility of the communicated message itself, such as informational quality, accuracy, or currency [11]. Next, we derive five key factors from the two dimensions; medium credibility and message credibility. Three factors, medium dependency, interactivity, and medium transparency were derived from the medium credibility dimension, two factors, argument strength and information quality were derived from message credibility dimension. Finally, drawing on the persuasion theory, we identify an individual's expertise moderates the effects of those five determinants from medium/message credibility dimension on information credibility. As shown in Figure 1, we develop research model that explains information credibility on Facebook pages.

2.1. Theoretical credibility dimensions

Previous research has argued that readers are less likely to pay attention to information that they do not believe [8]. Therefore, perceived information credibility has been considered important for the new media survival [49]. Information credibility is defined as the extent to which one perceives information to be believable [3], and is a strong predictor of information reader's further actions, such as recommendation or willingness to adopt viewpoint of the received information [4]. Researchers have used several perspectives to explain how to judge the information credibility. According to ELM, conventionally, information credibility can be investigated by three dimensions—medium, message and source credibility [10, 11]. Medium credibility refers to the perceived levels of credibility a specific medium that individuals used [12, 13]. Message credibility refers to the perceived credibility of the communicated message itself, such as informational quality, accuracy, or currency [11]. Source credibility focuses on the expertise or trustworthiness of the source as the likelihood to provide credible information [14, 15, 16, 17, 18, 19]. Source credibility rates the authors who provided the information in a way they are credible or not. However, in some cases (e.g., the context of the Umbrella Movement in Hong Kong), it was observed that people do not care about source information credibility when they “give a like” to a Facebook page. Accordingly, we do not take account of source credibility into our research. In this study, we try to find some new determinants from the remaining two dimensions that lead to this situation.

2.2. Medium credibility

Information on different platforms has different evaluation criteria of medium credibility. Wathen and Burkell [2] summarized some variables of medium credibility in the context of traditional media and websites. Research suggests that surface aspects of presentation are relevant to the assessment of medium credibility [2], for example, new features of websites, such as interface design of websites [21]. Applying the criteria for the assessment of medium credibility, researchers examined the credibility of social media platforms, such as blogs and the credibility of Twitter [22, 23]. While previous studies have attempted to identify the factors that determine medium credibility, focusing on the design features, few studies empirically examined the information credibility on Facebook pages from user's perspective. In the present study, we identified that the customization of layouts in Facebook pages supports only language change, but does not support background or color changes, which means different Facebook pages have almost same layouts. Consequently, instead of design features of Facebook pages as attributes of medium credibility, drawing on extensive literature review [33, 34, 35, 46], we identify the factors that determine the medium credibility: medium dependency, interactivity, and medium transparency.

Medium dependency

The media dependency theory suggested that media have capabilities to satisfy audience needs [46]. Medium dependency refers to a relation reflecting how individuals' goals are conditional upon the resources media afford. [7, 20] In our research, medium dependency is defined as the feeling or perception of having no alternatives other than the specific media to get informed about reality [24]. Prior studies commonly argue that when individual users rely more on a specific medium for information, they consider it to be more credible than other media [25, 26, 27]. Applying the logic to Facebook pages, we posit that an individual who perceived a high level of dependency on a medium is more likely to consider the information from the medium credible. Thus, we formulate the following hypothesis:

H1: Medium dependency is positively related to information credibility.

Interactivity

The concept of interactivity has often been defined and measured from technical perspective. In most Internet-related research, interactivity is interpreted as the computer's capability to exchange information between users and the interface [33]. However, some researchers suggested that interactivity should be defined and measured by psychological factors [34, 35]. Combining these two directions of definition, interactivity encompasses the likelihood of engagement in interaction, the perceived ease of interaction, and the degree of rapport that is activated [33]. Previous findings from literature indicate that individual users tend to trust information when they perceive a higher level of interactivity in a social media platform [33]. Consequently, we assume interactivity is strongly associated with medium credibility. An individual who perceived a high level of interactivity on a medium is more likely to consider the information from the medium credible. Accordingly, we formulate the following hypothesis:

H2: Interactivity is positively related to information credibility.

Medium transparency

Medium transparency refers to an individual's perceived willingness to share information freely and frankly with others on a specific medium [28, 29, 30]. Several studies in public relations propose that medium transparency is key to building relational trust [31, 32]. It has been also suggested that social media users consider blogs to be credible because blogs are independent from traditional and corporate-controlled media [31], which can allow bloggers to write in-depth, opinionated messages in a transparent manner [33]. Therefore, we posit that medium transparency is a factor that determines medium credibility

[32]. Specifically, we argue that an individual who perceived a high level of transparency on a medium is more likely to consider the information from the medium credible. Accordingly, we infer the following hypothesis:

H3: Medium transparency is positively related to information credibility.

2.3. Message credibility

The information credibility is receiver-based judgment that includes both objective perceptions of message credibility and subjective judgment of medium credibility [5]. Message credibility is the perceived credibility of the communicated message itself, such as informational quality, accuracy, or currency [11]. In other words, message credibility can be assessed by the information content on a medium. In this study, we identify two factors that determine message credibility: argument strength and information quality.

Argument strength

Argument strength is defined as the extent to which a message receiver views that argument to be convincing or valid in supporting its position [38]. Argument strength can be evaluated by completeness and the logic of message [37]. If an individual perceives the information has some valid arguments, he or she will develop a positive attitude toward the information and consider it to be credible [38]. Several studies have confirmed that argument strength is positively affected the attitude of the receiver, especially under the circumstance of online platforms [39]. Thus, we propose the following hypothesis:

H4: Argument strength is positively related to information credibility.

Information quality

How information is presented influences the choice processes of decision makers and can change how the user makes decisions [43]. Information quality (IQ) is concerned as the fitness for use of the information provided. Information quality has become a critical concern of organizations and an active area of Management Information Systems (MIS) research [44]. From academics' view of IQ dimensions, there are four dimension of information quality—Intrinsic IQ, Contextual IQ, Representational IQ and Accessibility IQ. Given that our research focuses on the information credibility, our study employs the concept of the intrinsic IQ and defines it as the matter of degree, ranging from the accurate and objective presentation to the currency of information. We adopt accuracy and objectivity as items to measure the perceived information quality on the Facebook-based platform. Researchers have consistently observed that presentation style of message is part of the typical formulation of a reliable message [2]. Therefore, we hypothesize:

H5: Information quality is positively related to information credibility.

2.4. The moderating effect of expertise

According to the ELM, information receiver's ability to process the information shape the effects of central and peripheral factors on the receiver's perception of information credibility [41]. Applying the notion of the ELM to the context of social media, it is inferred that the judgments of information credibility on Facebook pages platform can be better understood when we take individuals' ability to process information into consideration. Individual ability can be treated as the level of expertise, which is the extent to which an individual has background knowledge to understand the information on the specific platform [42]. Thus, we propose the following hypothesis:

H6: Personal expertise moderates the effects of medium credibility and message credibility on information credibility.

Since we introduce five key determinants from medium credibility dimensions and message credibility dimensions, there are also some sub-hypotheses related to those five factors—medium dependency; interactivity; medium transparency; argument strength and information quality.

H6a: The higher expertise an individual has, the less effects of medium dependency on the credibility of the information.

H6b: The higher expertise an individual has, the less effects of interactivity on the credibility of the information.

H6c: The higher expertise an individual has, the less effects of medium transparency on the credibility of the information.

H6d: The higher expertise an individual has, the more effects of argument strength on the credibility of the information

H6e: The higher expertise an individual has, the more effects of information quality on the credibility of the information.

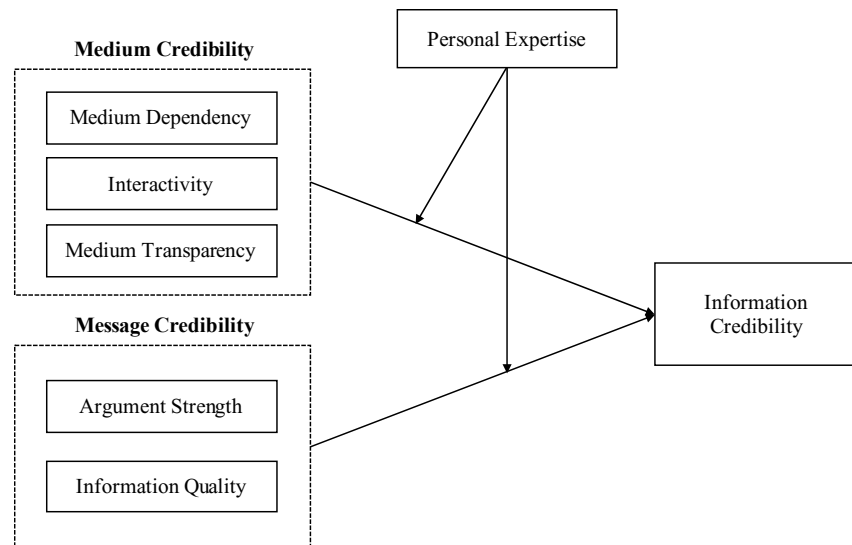


Figure.1. Research model

3. Methods

To test the proposed research model, we adopted a cross-sectional survey method for data collection and evaluated our hypotheses by applying the partial least squares (PLS) method. The unit of analysis for this study is an individual user of social media platforms.

3.1. Measurement

All measures were adapted from previous research, with some amendments to fit our research context. The questionnaire consists of two parts; Part A including an explanation of the general research purpose and a brief introduction of the use of Facebook during the Umbrella Movement and Part B including question items. Respondents were asked to answer the questions referring to the Facebook use as they had

experienced during that time. We also provided four samples that including top four popular Facebook pages, which provided verified information during the Umbrella Movement, and a blank for respondents to recognize their favorite Facebook page at that time. We asked the frequency of the use of a specific Facebook page. Therefore, we can receive the different evaluation from different Facebook pages. As for those questions related to hypotheses, the multiple-item method was used. And all of those questions had a context of “When I was using this Facebook page: I think...”. Respondents were required to indicate the extent to which they agree or disagree with a series of statements, measured by using a 5-point Likert Scale (1= Strongly Disagree; 5= Strongly Agree). In our research model, medium credibility was examined from three factors, Medium dependency, Interactivity, and Medium transparency. The general level of medium dependency on a specific Facebook page was measured using the modified 6 items based on Medium Dependency Theory [43, 48]. Typical items include “I think this Facebook page could help me to deepen my own understanding about the events.”; “I think this Facebook page could help me to participant in related activities.” In order to evaluate the overall interactivity on the specific Facebook page, we adapted and modified 4 items from [33]. To capture the individual perception of medium transparency on the specific Facebook page, we used the 3 measurement items revised from literature [28, 29, 30]. The measurement of message credibility contains two constructs, argument strength and information quality. Argument strength was adapted from [45]. The items for information quality mainly related to accuracy, objectivity, understandability and timeliness, which were adapted from [44]. The perceived information credibility on the specific Facebook page was measured by using 4 items modified from [49]. To measure personal expertise, we adapted from [42]. The measurement items are shown in Appendix A.

3.2. Data collection

A web survey was conducted to test the research model proposed above. We used the question, “Did you use Facebook as a tool to gain information during the Umbrella Movement?” to filter the respondents. If the respondent answered “no”, the online survey did not proceed. There are 146 people had started to answer the questionnaire and 135 people used Facebook as an information tool during the Umbrella Movement. We eliminated those invalid questionnaires and, finally, 135 individuals were used to test the hypotheses. Among the 135 respondents, 72 (53.3%) were male and 63 (46.66%) were female. They were generally young, less than 30 years old (85.18%) as described in Table 1.

Table 1. Demographic information of respondents

| Item | Category | Frequency (Ratio) |
|-----------------|----------------------|-------------------|
| Gender | Male | 72 (53.33%) |
| | Female | 63 (46.66%) |
| Age | Less than 18 | 27 (20%) |
| | 18-29 | 88 (65.18%) |
| | 30-39 | 14 (10.37%) |
| | 40 or older | 6 (4.44%) |
| | | |
| Education Level | High school or Below | 31 (22.96%) |
| | Bachelor's degree | 71 (52.59%) |
| | Master's degree | 31 (22.96%) |
| | Doctoral degree | 2 (1.43%) |

Most of respondents were well educated (77.03%), they have a university degree. They were familiar with the use of Facebook page to gain related information during the Umbrella Movement, and 122 (89.7%) reported using the specific Facebook page several times a day. 103 people (75.7%) chose Facebook page: LIVE: Verified updates as the information source. This Facebook page was the most popular one among respondents, which as same as we observed before. Table 1 provides an overview of the respondents' characteristics.

4. Results

4.1. Measurement model

We conducted a confirmatory factor analysis (CFA) to assess item reliability, convergent validity, and discriminant validity. We examined the loadings and the t-statistics of the indicators on their corresponding construct. According to Hulland [50], items with loading below 0.4 were omitted. Three items from media dependency (MD1, MD3, and MD4), one item from Argument Strength (AS3), and one item from Information credibility (CRDT3) were removed because of their low loading values. For the test of internal consistency, construct reliability was examined using the composite reliability. All reliability measures were 0.7 or higher, which is well above the recommended level of 0.7, indicating adequate construct reliability (See Table 3).

Table 2. Factor loadings for all constructs

| | AS | CRED | INTC | IQ | MD | MT | PE |
|-------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| AS1 | 0.86 | 0.08 | -0.44 | 0.55 | -0.31 | -0.34 | -0.03 |
| AS2 | 0.68 | 0.08 | -0.47 | 0.37 | -0.29 | -0.41 | 0.09 |
| AS4 | 0.97 | 0.30 | -0.24 | 0.58 | -0.26 | -0.21 | -0.02 |
| CRED1 | 0.04 | 0.90 | 0.31 | 0.13 | 0.30 | 0.37 | 0.08 |
| CRED2 | 0.33 | 0.93 | 0.43 | 0.18 | 0.32 | 0.44 | 0.05 |
| CRED4 | 0.22 | 0.75 | 0.15 | 0.24 | 0.10 | 0.04 | 0.01 |
| INTC1 | -0.42 | 0.26 | 0.88 | -0.29 | 0.62 | 0.61 | 0.02 |
| INTC2 | -0.60 | 0.07 | 0.79 | -0.47 | 0.66 | 0.52 | 0.04 |
| INTC3 | -0.21 | 0.41 | 0.92 | -0.13 | 0.61 | 0.56 | -0.01 |
| INTC4 | -0.32 | 0.40 | 0.93 | -0.31 | 0.64 | 0.55 | -0.02 |
| IQ1 | 0.72 | 0.07 | -0.53 | 0.64 | -0.54 | -0.26 | 0.03 |
| IQ2 | 0.23 | 0.20 | -0.03 | 0.77 | 0.08 | 0.04 | 0.01 |
| IQ3 | 0.63 | 0.17 | -0.24 | 0.84 | -0.20 | -0.12 | 0.02 |
| IQ4 | 0.38 | 0.07 | -0.25 | 0.62 | -0.44 | -0.15 | -0.01 |
| MD2 | -0.48 | 0.02 | 0.63 | -0.43 | 0.74 | 0.32 | -0.14 |
| MD5 | -0.29 | 0.35 | 0.68 | -0.19 | 0.99 | 0.38 | -0.01 |
| MD6 | -0.29 | 0.07 | 0.50 | -0.26 | 0.78 | 0.30 | -0.07 |
| MT1 | -0.31 | 0.34 | 0.54 | -0.06 | 0.34 | 0.93 | 0.01 |
| MT2 | -0.35 | 0.32 | 0.59 | -0.24 | 0.45 | 0.84 | 0.03 |
| MT3 | -0.18 | 0.36 | 0.54 | 0.03 | 0.26 | 0.92 | 0.09 |
| PE1 | -0.01 | 0.07 | 0.01 | -0.01 | -0.03 | 0.05 | 0.98 |
| PE2 | 0.02 | 0.01 | 0.01 | 0.03 | -0.02 | 0.05 | 0.61 |
| PE3 | -0.00 | 0.02 | -0.04 | 0.07 | -0.02 | 0.03 | 0.84 |

To assess discriminant validity, we examined the average variance extracted (AVE) value. For satisfactory discriminant validity, the AVE from the construct should be greater than the variance shared

between the construct and other constructs in the model. For each construct, the square root of the average variance extracted should exceed the construct's correlation with every other construct. The results indicate that the AVE for each construct is larger than the correlation of that construct with all the other constructs in the both models, ensuring the discriminant validity of the constructs.

For the test of internal consistency, construct reliability was examined using the composite reliability. All reliability measures were 0.7 or higher, which is well above the recommended level of 0.7 [51], indicating adequate construct reliability. The Average Variance Extracted (AVE), which should be above 0.5 [51] is used to measure convergent validity. As shown in Table 3, all AVE values in our study meet this requirement.

Table 3. Descriptive results and internal consistency of constructs

| Construct | Number of items | AVE | Composite Reliability | Cronbach's Alpha |
|-----------|-----------------|------|-----------------------|------------------|
| MD | 3 | 0.71 | 0.88 | 0.86 |
| INTC | 4 | 0.78 | 0.93 | 0.92 |
| MT | 3 | 0.80 | 0.92 | 0.86 |
| AS | 4 | 0.74 | 0.88 | 0.83 |
| IQ | 4 | 0.52 | 0.81 | 0.73 |
| CRED | 4 | 0.71 | 0.90 | 0.84 |
| EXPT | 3 | 0.68 | 0.86 | 0.81 |

Discriminant validity describes the degree to which the measure of a construct is different from the measures of other constructs that it does not theoretically resemble. And the square root of every AVE of each construct should be larger than the construct's correlation with every other construct. This condition of discriminant validity was upheld in our study, as shown in Table 4. All values of the square root of AVE were above 0.7, and exceeded all other cross-correlations. This presents that the variance explained by each construct was larger than the measurement error variance [51]. Thus, the measures meet the requirement of discriminant validity.

Common method bias is a measurement error [47] that threatens the validity of conclusions drawn upon the statistical results. We tested the common method bias to prevent any damage from self-report measurement. We undertook the principal component factor analysis to examine the existence of a factor that explains the majority of common variance. The results from this test revealed that the amount of variance explained by the identified five factors, with an average of 15.1 percent. On the basis of the results of the test, we concluded that there is little risk of common method bias in the study.

Table 4. AVE and discriminant validity

| | AVE | AS | CRED | IQ | INTC | MD | MT | PE |
|------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| AS | 0.71 | 0.84 | | | | | | |
| CRED | 0.74 | 0.25 | 0.86 | | | | | |
| IQ | 0.52 | 0.60 | 0.21 | 0.72 | | | | |
| INTC | 0.78 | -0.36 | 0.38 | -0.28 | 0.88 | | | |
| MD | 0.71 | -0.32 | 0.31 | -0.21 | 0.69 | 0.84 | | |
| MT | 0.80 | -0.31 | 0.3 | -0.09 | 0.62 | 0.39 | 0.90 | |
| EXPT | 0.68 | -0.01 | 0.06 | 0.02 | -0.01 | -0.03 | 0.05 | 0.82 |

Note: Diagonal elements (in bold) are the square root of the average variance extracted (AVE). Off-diagonal elements are the correlations among constructs.

4.2. Test of the structural model

To test the research model, partial least squares (PLS) was used. Given that this study is an early attempt to develop a theoretical model that predicts what factors influence the information credibility on Facebook-based platform, PLS is appropriate. The model explained 42% of the variance of information credibility. As we hypothesized, the results showed that perceived interactivity and medium transparency positively influenced information credibility, supporting H2 and H3. The results also show that argument strength has a significant on information credibility, supporting H4. However, the results indicated that medium dependency (H1) and information quality (H5) did not significantly influence information credibility. Figure 2 shows the results of the test of the structural model.

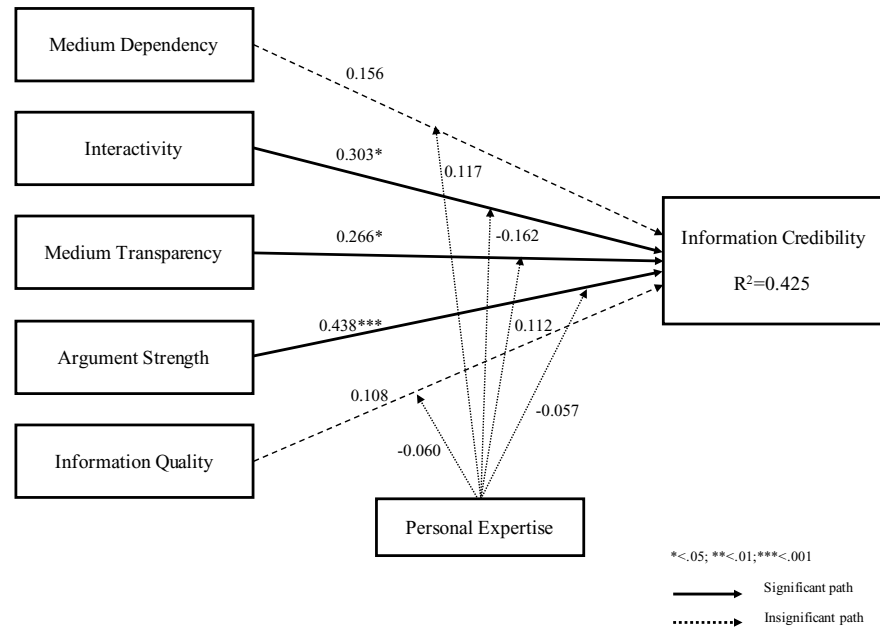


Figure 2. Results of the structural model

On the other hand, the results of this study indicated that personal expertise has no significant moderating effects between factors from medium/message credibility dimensions and the perceived information credibility. Contrary to our expectations, the results did not match with literature. Accordingly, all hypotheses related to moderating effects were not supported.

5. Discussion

The aim of this study was to examine the factors that influence the information credibility on social media platforms. This study identified three factors—medium dependency (H1), interactivity (H2) and medium transparency (H3) as per medium credibility. Contrary to our expectation, the results show that medium dependency has no significant influence on information credibility. We attribute the results to the characteristics of our respondents, who are mainly young people (85.18%) at age below 30. They are the first generation to come of age in a digital world [46]. In general, this generation has grown up with video games and social networking, and prefer to be connected at all times to their friends and family through texting, instant messaging, mobile phones, and Facebook and Myspace [46]. They are familiar with the

use of social media platform and there are many different social media platforms for them to use. Individuals who use alternative media sources feel less dependent on the media than those who do not use alternative sources. We assume that respondents use different social media to gain related information and the dependency of one specific Facebook page is not too high. The results show that interactivity on medium was positively associated with information credibility. We attribute the results to the fact that interactivity presents the likelihood of engagement in interaction, the perceived ease of interaction, and the degree of rapport activated. Furthermore, this study finds that a significant relationship exists between medium transparency and information credibility. The results imply that respondents feel that the Facebook pages are independent from mainstream, corporate-controlled media, which can allow authors to write in-depth, opinionated messages in a transparent manner.

This study identified two factors—argument strength (H4) and information quality (H5) as per message credibility. Our results show that while argument strength has a significant positive influence on information credibility, information quality has no influence on information credibility. The results indicate that even though information on Facebook-based platform is based on user-generated content, respondents hold the opinion that the information was well-planned and had some degrees of strength of persuasive arguments. In other words, individual have high level of message credibility, and this trust level might be transferred to medium itself. Future study might consider this type of trust transfer between social media platforms and information content more in-depth.

In addition, we found that there was no moderating effect of personal expertise. One possible explanation is that information on those social media platforms might not require profound knowledge for the respondents to be able to understand it. We presume that information consumer can easily get the viewpoint of information on this social media platform.

5.1. Theoretical and practical implications

Overall, this study is a response to the call for more in depth research on information credibility on social media platforms and it holds implication for the academic world, especially, because it served to broaden our understanding of the factors from the two dimensions (i.e., medium credibility and message credibility). The main theoretical contribution of this research is that we included some new attributes into the medium credibility. While many researchers have studied some technical qualities of a medium regarding medium credibility, little research has considered this concept from the users' perspective. Our research provides a more suitable model for today's online environment, considering medium credibility and message credibility. We believe our conceptualization, measurement, and nomological networks can be applicable to assess information credibility in a variety of social media platforms, such as Twitter or YouTube. Since it is impossible to wipe out all of online rumors, credible information on social media platforms can play an important role for the sustainability of social media. Our study offers several key implications for practice. First, the findings provide insight for information providers. They should pay attention to different aspects of the medium credibility if they want to ensure that users see their user-generated content as credible and therefore useful. In order to have a high level of information credibility, we suggest that managers or operations of a social media platform should keep a high level of interactivity and medium transparency on their platform. Second, for users, to figure out what factors influence the information credibility on a social media platform will help them more efficiently to filter useful information, especially when the desire for truth and reliable sources is great. We suggest that information users pay more attention to argument strength of a message.

5.2. Limitations and future research

These findings should be interpreted in light of the study's limitations. The first limitation is related to our examination of the measures that is based on relatively small samples. Second, this study relied on the self-reported, perception-based measure that was employed for capturing the perception of credibility. Maybe, due to small samples and self-reported judgment, we did not capture any moderating effect in our study. Future research could benefit from employing larger and more diverse samples. In addition, we believe that our research represents exploratory stages in the development of an extended understanding of online information assessment. To increase the generalizability of our findings, the results of our study should be compared carefully with those that have been based on objective data [36].

6. Conclusion

While the growing popularity of the use of social media platform, especially Facebook, and its potential to propagate misinformation, the ability to judge credible information is becoming more important. Social media users need to pay attention to information credibility because online rumor may cause serious harm to individuals and society, as we observed under the context of Umbrella Movement. Our findings provide an initial step in understanding what factors influence information credibility on Facebook pages so that information providers and users can evaluate information credibility more effectively. While we did not observe any moderating effects from individual expertise that was supported by previous literature, we hope that this research will motivate other research on the factors influencing information-processing and the effect of persuasion of information on social media platforms.

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Appendix A. Measurement Items

| Construct | Item | Measures |
|---|-------|---|
| Medium Credibility | | |
| Dependency (MD) | Item1 | When I was using this Facebook page: I think this Facebook page could help me to participant in related activities. |
| | Item2 | I think this Facebook page could help me to get ideas about how to approach others. |
| | Item3 | I think this Facebook page could help me to deepen my own understanding about the events. |
| | Item4 | I think this Facebook page could help me to figure out what is happening. |
| | Item5 | I think this Facebook page could help me to experience enjoyable media content. |
| | Item6 | I think this Facebook page could help me to initiate discussion with others about the media content. |
| Interactivity (INTC) | | When I was using this Facebook page: |
| | Item1 | I think communicating with other users was very easy. |
| | Item2 | I always communicate with other users. (e.g. make comments, give a “like”, repost messages) |
| | Item3 | I could always get a lot of responses to my posts. |
| Transparency (MT) | Item4 | Other users replied my posts very quickly. |
| | | When I was using this Facebook page: |
| | Item1 | I think this Facebook page provided unbiased, balanced coverage of information. |
| | Item2 | I think this Facebook page provided detail about how the news was constructed. |
| | Item3 | I think this Facebook page had enough editorial freedom to share information. |
| Message credibility | | |
| Argument Strength (AS) | Item1 | In general, the argument of information on this Facebook page was convincing. |
| | Item2 | In general, the argument of information on this Facebook page was persuasive. |
| | Item3 | In general, the argument of information on this Facebook page was valid. |
| | Item4 | In general, the argument of information on this Facebook page was logic. |
| Information Quality (IQ) (Accuracy; Objectivity; Understandability; Timeliness) | Item1 | In general, the information on this Facebook page was accurate. |
| | Item2 | In general, the information on this Facebook page was objectively presented. |
| | Item3 | In general, the information on this Facebook page was easy to understand. |
| | Item4 | In general, the information on this Facebook page was sufficiently timely. |
| Personal Expertise (EXPT) | Item1 | I am familiar with the topic of information on this Facebook page. |
| | Item2 | I am very knowledgeable in evaluating quality of information on this Facebook page. |
| | Item3 | I do not have any difficulty in understanding information on this Facebook page. |
| Information credibility (CRED) | Item1 | In general, I think information on this Facebook page is believable. |
| | Item2 | In general, I think information on this Facebook page is factual. |
| | Item3 | In general, I think information on this Facebook page is credible. |
| | Item4 | In general, I think information on this Facebook page is trustworthy. |

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